a position sensitive detector situated with respect to the coded mask to allow the coded shadow generated by the mask to impinge thereon, the position sensitive detector generating a coded optical signal in response to the coded shadow impinging thereon;

an array of charge coupled devices, the array being responsive to the coded optical signal and generating a coded electrical signal in response thereto;

a signal processor, the signal processor being responsive to the coded electrical signal and decoding the coded electrical signal to generate an image signal therefrom, the image signal being representative of an image of the non-focusable gamma ray emitting source; and

a display, the display including a visual representation of an area in a field of view of the imaging system and wherein a representative image of the source responsive to the image signal is superimposed on the visual representation.

17. (Twice Amended) A method of generating a representative image of a non-focusable gamma ray emitting source, comprising:

providing a gamma ray imaging device including a coded mask, the coded mask being a uniformly redundant array having high throughput, the mask receiving non-focusable gamma rays emitted by at least one source and generating a coded shadow in response to the gamma rays received thereby, a position sensitive detector situated with respect to the coded mask to allow the coded shadow generated by the mask to impinge thereon, the position sensitive detector generating a coded optical signal in response to the coded shadow impinging thereon, an array of charge coupled devices, the array being responsive to the coded optical signal and generating a coded electrical signal in response thereto, and a signal processor, the signal processor being responsive to the coded electrical signal and decoding the coded electrical signal to generate an image signal therefrom;

situating the gamma ray imaging device so that a gamma ray emitting source is within a field of view of the device;

creating a visual representation of an area in the field of view of the device; and

superimposing the image signal onto the visual representation of the area in the field of view of the device.

19. (Twice Amended) An X-ray imaging system for providing an image of a non-focusable X-ray emitting source, which comprises:

a coded mask, the coded mask being a uniformly redundant array having high throughput, the mask receiving non-focusable X-rays emitted by at least one source, the coded mask generating a coded shadow in response to the X-rays received thereby;

a position sensitive detector situated with respect to the coded mask to allow the coded shadow generated by the mask to impinge thereon, the position sensitive detector generating a coded optical signal in response to the coded shadow impinging thereon;

an array of charge coupled devices, the array being responsive to the coded optical signal and generating a coded electrical signal in response thereto;

a signal processor, the signal processor being responsive to the coded electrical signal and decoding the coded electrical signal to generate an image signal therefrom, the image signal being representative of an image of the non-focusable X-ray emitting source; and

a display, the display including a visual representation of an area in a field of view of the imaging system and wherein a representative image of the source responsive to the image signal is superimposed on the visual representation.

33. (Amended) A gamma ray imaging system for providing an image of a gamma ray emitting source, which comprises:

a coded mask [including] comprising a uniformly redundant array having high throughput, the coded mask receiving non-focusable gamma rays emitted by at least one source, the coded mask generating a coded shadow in response to the gamma rays received thereby;

a glass fiber scintillator situated with respect to the coded mask to allow the coded

shadow generated by the mask to impinge thereon, the scintillator generating a coded optical signal in response to the coded shadow impinging thereon;

an optical fiber taper having a first end coupled to the scintillator, the optical fiber taper transferring the coded optical signal to an image intensifier;

a multistage image intensifier tube, having an input coupled to a second end of the optical fiber taper, the image intensifier amplifying and intensifying the coded optical signal received from the optical fiber taper to provide increased sensitivity to the system;

an array of charge coupled devices, the array being coupled to an output of the multistage image intensifier tube and generating a coded electrical signal in response to the coded optical signal received therefrom, the array being thermoelectrically cooled to improve a signal-to-noise ratio;

a digital signal processor, the digital signal processor receiving the coded electrical signal from the array of charge coupled devices and decoding the coded electrical signal to generate an image signal therefrom, the image signal being representative of an image of the non-focusable gamma ray emitting source; and

a monitor, the monitor being responsive to the image signal for displaying a representative image of the source.

34. (Amended) A method for scanning facilities having a plurality of potential radiation sources, comprising the steps of:

scanning an area with a hand-held, portable radiation imaging device, the imaging device including a coded mask [having] comprising a uniformly redundant array having high throughput, the mask [for] receiving radiation emitted from at least one source and generating a coded shadow therefrom, a glass fiber scintillator positioned to receive the coded shadow generated by the mask, the scintillator generating a coded optical signal in response to the shadow impinging thereon, an array of charge coupled devices for receiving the coded optical signal from the scintillator and generating a coded electrical signal therefrom;

transmitting the coded electrical signal from the array of charge coupled devices to a remote location;

processing the coded electrical signal to decode the signal and generate an image signal therefrom;

displaying the image signal to create a representative image of the at least one source at a remote location from the portable radiation imaging device; and

superimposing the representative image onto a visual representation of a field of view of the portable radiation imaging device to specifically illustrate the source of radiation.

REMARKS

The Office Action dated June 29, 1995 and the references cited therein have been carefully considered. The claims have been amended in a sincere effort to define more clearly and more specifically features of Applicants' invention that distinguish over the art of record.

In the Office Action, Claims 1, 4-7, 14-17, 19, 20 and 21 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 4,521,688 to Yin in view of U.S. Patent No. 5,286,973 to Westrom, et al. The Examiner contends that the '688 Yin reference discloses a gamma ray imaging system for non-focusable gamma rays, the system including a coded mask 22, a position sensitive detector 24, an array of charge coupled devices 36, a signal processor 40 and a display 52. The Examiner relies on the teachings in the Westrom, et al. reference as disclosing a visual representation of an area in the field of view of the imaging system and superimposing a representative image of the radiation emitting source on the visual representation. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the gamma ray imaging system as discussed in the '688 Yin reference with the display means disclosed in the Westrom, et al. reference.